

Title (en)  
ULTRASONIC PIPELINE INSPECTION SYSTEM AND METHOD

Title (de)  
ULTRASCHALL-LEITUNGSPRÜFUNGSSYSTEM UND -VERFAHREN

Title (fr)  
SYSTÈME ET PROCÉDÉ D'INSPECTION DE PIPELINE PAR ULTRASONS

Publication  
**EP 3084415 A1 20161026 (EN)**

Application  
**EP 14825465 A 20141219**

Priority

- EP 13199153 A 20131220
- NL 2014050887 W 20141219
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Abstract (en)  
[origin: EP2887060A1] A hollow structure like a pipeline is inspected using an array of ultrasound transmitters located within the hollow structure distributed over different radial directions from a center of the array. Parameters such as ellipticity, defining a shape and/or orientation of an inner surface of a wall of the hollow structure are first determined based on measured delays between transmission of ultrasound pulses from the transmitters to reception of first reflections of those ultrasound pulses. Parameters may be used that define an elliptically shaped cross-section of the inner wall surface for example. Next an ultrasound wavefront composed of joint transmissions from the transmitters along at least a sector of the array is transmitted, using relative time delays between waves transmitted by the respective ones of the transmitters to compensate for estimated differences between travel times from the transmitters to the shape defined by the parameters. Reflections of the joint transmissions are detected. The reflections may be detected by computing derivatives with respect to frequency of phase values of Fourier transforms of the reflected signals and detecting peaks in the size of the computed derivatives of the phase values.

IPC 8 full level  
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Citation (search report)  
See references of WO 2015093960A1

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